Summary of Raw Water Quality*
Otay Water Treatment Plant Influent 2006-2010

Parameters	Units	DLR**/MDL	Drinking Water Standards[1]		No. of Samples	Raw Water Quality			
			MCL	SMCL		Min	Max	Mean	Median
General Physical									
Calcium Hardness (CaCO3)	mg/L	20			62	98.9	201	137	138
Color	Color	1		15	368	nd	37	8.86	7
Conductivity	µmho/cm			1600	51	688	1080	902	911
Corrosivity[2]	--				51	-0.38	1.02	0.338	0.38
Total alkalinity	mg/L	20			64	83.6	152	121	123
Total Dissolved Solids	mg/L	10		1000	52	321	874	526	539
Total Hardness (CaCO3)	mg/L	20			65	171	279	228	227
Total Suspended Solids (TSS)	mg/L	1			54	1	7.5	1.38	1
Turbidity[3]	ntu	0.07	0.5		1810	0.15	39	0.74	0.61
pH	pH			6.5-8.5	1285	6.19	8.83	7.93	7.98
Pathogens and Indicator Organisms									
E. Coli	/100 mL				60	nd	84	18.5	6.3
Fecal Coliform	/100 mL				1613	2	1600	30.5	8
Heterotrophic Bacteria (HPC)	cfu/mL				237	1	3700	267	110
Total Coliform	/100 mL		(4)		1673	nd	16000	442	50
Total Crypto Oocyst Count	/ L				59	nd	1	nd	nd
Total Giardia Cyst Count	/ L				59	nd	1	nd	nd
Metals									
Aluminum	µg/L	50	1000	200	55	nd	51.6	nd	nd
Antimony	µg/L	6	6		21	nd	nd	nd	nd
Arsenic	µg/L	2	10		21	nd	2.36	nd	nd
Barium	µg/L	100	1000		21	nd	104	nd	nd
Beryllium	µg/L	1	4		20	nd	nd	nd	nd
Boron	µg/L	100			21	nd	167	133	139
Cadmium	µg/L	1	5		22	nd	nd	nd	nd
Chromium	µg/L	10	50		22	nd	nd	nd	nd
Copper	µg/L	50	1300[7]	1000	55	nd	nd	nd	nd
Iron	µg/L	100		300	54	nd	822	nd	nd
Lead	µg/L	5	15[7]		55	nd	nd	nd	nd
Magnesium	mg/L				54	4	30.9	22.3	23
Manganese	µg/L	20		50	55	nd	710	33.5	nd
Mercury	µg/L	1	2		16	nd	nd	nd	nd
Nickel	µg/L	10	100		22	nd	nd	nd	nd
Selenium	µg/L	5	50		21	nd	nd	nd	nd
Silver	µg/L	10		100	21	nd	nd	nd	nd
Sodium	mg/L	20			54	59.3	105	84.9	85.5
Thallium	µg/L	1	2		21	nd	nd	nd	nd
Vanadium	µg/L	3			21	nd	3.15	nd	nd
Zinc	µg/L	50		5000	55	nd	nd	nd	nd
Radiological									
Gross *Alpha*	pCi/L	3	15		1	nd	nd	nd	nd
Gross *Beta*	pCi/L	4	50		1	nd	nd	nd	nd
Combined Radium-226 & Radium-228	pCi/L		5		1	0.83	0.83	0.83	nd
Strontium 90	pCi/L	2	8		1	nd	nd	nd	nd
Tritium	pCi/L	1000	20000		1	nd	nd	nd	nd
Uranium	pCi/L	1	20		1	2.14	2.14	2.14	2.14
Inorganic Constituents									
Ammonia-N	mg/L	0.031			89	nd	2.96	0.045	nd
Bicarbonate	mg/L				54	103	169	146	150
Bromate	µg/L	5	10		1	nd	nd	nd	nd
Bromide	mg/L	0.1			57	nd	0.324	0.165	0.18
Calcium	mg/L				54	39.6	80.4	56.2	56.6
Carbonate	mg/L				54	0	10.9	0	0
Chloride	mg/L	0.5		500	58	59.1	138	96.8	96.2
Cyanide, Total	mg/L	0.1	0.15		8	nd	nd	nd	nd
Fluoride	mg/L	0.1	2		55	0.17	0.332	0.250	0.257
MBAS (Detergents)	mg/L	0.05		0.5	6	nd	0.2	nd	nd
Nitrate (as NO3)	mg/L	2	45		141	nd	2.17	nd	nd
Nitrite (as NO2)	mg/L	1.31	3.29		91	nd	nd	nd	nd
Perchlorate	µg/L	4	6		15	nd	nd	nd	nd
Phosphate, Ortho (as PO4)	mg/L	0.2			56	nd	0.268	nd	nd
Phosphorus	mg/L	0.078			54	nd	nd	nd	nd
Potassium	mg/L	0.5			54	3.12	5.67	4.45	4.5
Silica	mg/L	0.5			54	4.46	13.5	7.85	7.32
Sulfate	mg/L	0.5		500	57	91.2	209	154	158
Total Nitrogen	mg/L	0.156			53	nd	2.09	0.383	0.36
UV254	aBS	0.004			555	0.025	0.156	0.069	0.063
UV254 Filtered	aBS	0.003			4	0.053	0.053	0.053	0.053
Organic Constituents Regulated									
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	0.5	200		19	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	µg/L	0.5	1		19	nd	nd	nd	nd
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	0.5	5		19	nd	nd	nd	nd
1,1-Dichloroethane (1,1-DCA)	µg/L	0.5	5		19	nd	nd	nd	nd
1,1-Dichloroethylene (1,1-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd
1,2,4-Trichlorobenzene	µg/L	0.5	5		19	nd	nd	nd	nd
1,2-Dichlorobenzene (*o*-DCB)	µg/L	0.5	600		19	nd	nd	nd	nd
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.5		19	nd	nd	nd	nd
1,2-Dichloropropane	µg/L	0.5	5		19	nd	nd	nd	nd
1,4-Dichlorobenzene (*p*-DCB)	µg/L	0.5	5		19	nd	nd	nd	nd

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			MCL	SMCL		Min	Max	Mean	Median
2,4,5-TP (SILVEX)	µg/L	1	50		18	nd	nd	nd	nd
2,4-D	µg/L	10	70		18	nd	nd	nd	nd
Alachlor (ALANEX)	µg/L	1	2		19	nd	nd	nd	nd
Atrazine (AATREX)	µg/L	0.5	1		18	nd	nd	nd	nd
Bentazon (BASAGRAN)	µg/L	2	18		18	nd	nd	nd	nd
Benzene	µg/L	0.5	1		19	nd	nd	nd	nd
Benzo(a)pyrene	µg/L	0.1	0.2		17	nd	nd	nd	nd
Bromodichloromethane	µg/L	1	100		244	nd	30.8	3.76	2.74
Bromoform	µg/L	1	100		243	nd	11.4	1.89	1.08
Carbofuran (FURADAN)	µg/L	5	18		18	nd	nd	nd	nd
Carbon Tetrachloride	µg/L	0.5	0.5		19	nd	nd	nd	nd
Chlordane	µg/L	0.1	0.1		8	nd	nd	nd	nd
Chloroform (Trichloromethane)	µg/L	1			244	nd	25.2	2.42	1.25
cis -1,2-Dichloroethylene (*c* -1,2-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd
Dalapon	µg/L	10	200		45	nd	nd	nd	nd
Di(2-ethylhexyl) Adipate	µg/L	5	400		18	nd	nd	nd	nd
Dibromoacetic Acid (DBAA)	µg/L	1			45	nd	5.98	0.24	nd
Dibromochloromethane	µg/L	1			244	nd	34.1	4.74	3.15
Dibromochloropropane (DBCP)	µg/L	0.01	0.2		25	nd	nd	nd	nd
Dichloroacetic Acid (DCAA)	µg/L	1			45	nd	9.08	nd	nd
Dichloromethane (Methylene Chloride)	µg/L	0.5	5		19	nd	nd	nd	nd
Diethylhexylphthalate (DEHP)	µg/L	3	4		18	nd	nd	nd	nd
Dinoseb (DNBP)	µg/L	2	7		18	nd	nd	nd	nd
Diquat	µg/L	4	20		17	nd	nd	nd	nd
Endothall	µg/L	45	100		21	nd	nd	nd	nd
Endrin	µg/L	0.1	2		26	nd	nd	nd	nd
Ethyl Benzene	µg/L	0.5	300		19	nd	nd	nd	nd
Ethylene Dibromide (EDB)	µg/L	0.02	0.05		26	nd	nd	nd	nd
Glyphosate	µg/L	25	700		17	nd	nd	nd	nd
Haloacetic Acids (five) (HAA5)[5]	µg/L	1	60		44	nd	23.8	1.43	nd
Heptachlor	µg/L	0.01	0.01		7	nd	nd	nd	nd
Heptachlor Epoxide	µg/L	0.01	0.01		7	nd	nd	nd	nd
Hexachlorobenzene	µg/L	0.5	1		26	nd	nd	nd	nd
Hexachlorocyclopentadiene	µg/L	1	50		20	nd	nd	nd	nd
Lindane (gamma-BHC)	µg/L	0.2	0.2		7	nd	nd	nd	nd
m,p -Xylene	µg/L	0.5			19	nd	nd	nd	nd
Methoxychlor	µg/L	10	30		26	nd	nd	nd	nd
Methyl-*tert* -butyl ether (MTBE)	µg/L	3	13	5	19	nd	nd	nd	nd
Molinate (ORDRAM)	µg/L	2	20		14	nd	nd	nd	nd
Monobromoacetic Acid (MBAA)	µg/L	1			44	nd	1.45	nd	nd
Monochloroacetic Acid (MCAA)	µg/L	2			45	nd	nd	nd	nd
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	70		19	nd	nd	nd	nd
Oxamyl (Vydate)	µg/L	20	50		18	nd	nd	nd	nd
o -Xylene	µg/L	0.5			19	nd	nd	nd	nd
Pentachlorophenol (PCP)	µg/L	0.5	1		18	nd	nd	nd	nd
Picloram	µg/L	1	500		18	nd	nd	nd	nd
Polychlorinated Biphenyls, Total, as DCB	µg/L	0.5	0.5		9	nd	nd	nd	nd
Simazine (PRINCEP)	µg/L	1	4		18	nd	nd	nd	nd
Styrene	µg/L	0.5	100		19	nd	nd	nd	nd
Tetrachloroethylene (PCE)	µg/L	0.5	5		19	nd	nd	nd	nd
Thiobencarb (BOLERO)	µg/L	1	70	1	20	nd	nd	nd	nd
Toluene	µg/L	0.5	150		19	nd	nd	nd	nd
Total Organic Carbon (TOC)	mg/L	0.3			240	2.22	7.94	4.07	3.85
Total Trihalomethanes (TTHMs)[6]	µg/L	1	80		219	nd	99	13.9	11.8
Total Xylenes (m,p, & o)	µg/L		1750		19	nd	nd	nd	nd
Toxaphene	µg/L	1	3		7	nd	nd	nd	nd
trans -1,2-Dichloroethylene (*t* -1,2-DCE)	µg/L	0.5	10		19	nd	nd	nd	nd
Trichloroacetic Acid (TCAA)	µg/L	1			45	nd	7.32	nd	nd
Trichloroethylene (TCE)	µg/L	0.5	5		19	nd	nd	nd	nd
Trichlorofluoromethane (FREON 11)	µg/L	5	150		19	nd	nd	nd	nd
Trichlorotrifluoroethane (FREON 113)	µg/L	10	1200		19	nd	nd	nd	nd
Vinyl Chloride (VC)	µg/L	0.5	0.5		19	nd	nd	nd	nd
Organic Constituents Unregulated									
1,1,1,2-Tetrachloroethane	µg/L	0.5			19	nd	nd	nd	nd
1,1-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
1,2,3-Trichlorobenzene	µg/L	0.5			19	nd	nd	nd	nd
1,2,3-Trichloropropane	ng/L	5			17	nd	nd	nd	nd
1,2,4-Trimethylbenzene	µg/L	0.4			19	nd	nd	nd	nd
1,3,5-Trimethylbenzene	µg/L	0.5			19	nd	nd	nd	nd
1,3-Dichlorobenzene (m-DCB)	µg/L	0.5			19	nd	nd	nd	nd
1,3-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd
2,2-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd
2,4,5-T	µg/L	3			18	nd	nd	nd	nd
2,4-DB	µg/L	3			18	nd	nd	nd	nd
2-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd
2-Methylisoborneol (MIB)	ng/L	5			217	nd	52.9	nd	nd
3,5-Dichlorobenzoic Acid	µg/L	3			18	nd	nd	nd	nd
3-Hydroxycarbofuran	µg/L	3			18	nd	nd	nd	nd
4-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd
Acenaphthylene	µg/L	5			12	nd	nd	nd	nd
Acifluorfen	µg/L	3			18	nd	nd	nd	nd
Aldicarb (TEMIK)	µg/L	3			18	nd	nd	nd	nd
Aldicarb Sulfone	µg/L	4			18	nd	nd	nd	nd
Aldicarb Sulfoxide	µg/L	3			18	nd	nd	nd	nd

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			MCL	SMCL		Min	Max	Mean	Median
Aldrin	µg/L	0.075			6	nd	nd	nd	nd
Anthracene	µg/L	5			18	nd	nd	nd	nd
Baygon	µg/L	0.4			18	nd	nd	nd	nd
Benzo (a) Anthracene	µg/L	10			19	nd	nd	nd	nd
Benzo (b) Fluoranthene	µg/L	10			17	nd	nd	nd	nd
Benzo (g,h,i) Perylene	µg/L	10			17	nd	nd	nd	nd
Benzo (k) Fluoranthene	µg/L	10			17	nd	nd	nd	nd
Benzyl Butyl Phthalate	µg/L	10			18	nd	nd	nd	nd
Bromobenzene	µg/L	0.5			19	nd	nd	nd	nd
Bromochloromethane	µg/L	0.5			19	nd	nd	nd	nd
Bromomethane (Methyl Bromide)	µg/L	0.5			19	nd	nd	nd	nd
Carbaryl (Sevin)	µg/L	5			18	nd	nd	nd	nd
Chloramben	µg/L	3			18	nd	nd	nd	nd
Chloroethane	µg/L	0.5			19	nd	nd	nd	nd
Chloromethane (Methyl Chloride)	µg/L	0.5			19	nd	nd	nd	nd
Chrysene	µg/L	5			19	nd	nd	nd	nd
cis -1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Dibenzo (a,h) anthracene	µg/L	5			17	nd	nd	nd	nd
Dibromomethane	µg/L	0.5			19	nd	nd	nd	nd
Dicamba (BANVEL)	µg/L	1.5			18	nd	nd	nd	nd
Dichlorodifluoromethane (Freon 12)	µg/L	0.5			19	nd	nd	nd	nd
Dichlorprop	µg/L	3			18	nd	nd	nd	nd
Dieldrin	µg/L	0.02			7	nd	nd	nd	nd
Diethyl phthalate	µg/L	5			19	nd	nd	nd	nd
Diisopropyl Ether (DIPE)	µg/L	3			19	nd	nd	nd	nd
Dimethyl phthalate	µg/L	5			14	nd	nd	nd	nd
di-*n* -Butylphthalate	µg/L	5			19	nd	nd	nd	nd
Dissolved Organic Carbon (DOC)	mg/L	0.3			2	3.77	3.85	3.81	3.81
Ethyl-tert-Butyl Ether (ETBE)	µg/L	3			19	nd	nd	nd	nd
Fluorene	µg/L	5			19	nd	nd	nd	nd
Geosmin	ng/L	5			216	nd	7.5	nd	nd
Hexachlorobutadiene	µg/L	0.5			19	nd	nd	nd	nd
Indeno (1,2,3-cd) Pyrene	µg/L	10			17	nd	nd	nd	nd
Isopropylbenzene (Cumene)	µg/L	0.5			19	nd	nd	nd	nd
MCPA	µg/L	3			18	nd	nd	nd	nd
MCPP	µg/L	3			18	nd	nd	nd	nd
Methiocarb	µg/L	0.4			18	nd	nd	nd	nd
Methomyl	µg/L	2			18	nd	nd	nd	nd
Naphthalene	µg/L	0.5			33	nd	nd	nd	nd
n -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
n -Propylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Paraquat	µg/L	4			17	nd	nd	nd	nd
PCB 1016 / 1242	µg/L	0.5			4	nd	nd	nd	nd
PCB-1016 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1221 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1232 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1242 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1248 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1254 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1260 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
Phenanthrene	µg/L	5			19	nd	nd	nd	nd
p -Isopropyltoluene	µg/L	0.2			19	nd	nd	nd	nd
Propachlor	µg/L	0.5			26	nd	nd	nd	nd
Pyrene	µg/L	0.5			19	nd	nd	nd	nd
sec -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
tert -Amyl Methyl Ether (TAME)	µg/L	3			19	nd	nd	nd	nd
tert -Butyl Alcohol (TBA)	µg/L	2			19	nd	nd	nd	nd
tert -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
trans -1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Trifluralin	µg/L	0.5			19	nd	nd	nd	nd

NOTES:

*The acceptance criteria in this table apply to finished, potable water, and are for reference only.

** The State of California DLR values are used when available. Parameters without DLR values were reported at MDL levels.

(1) State MCL and MCLG values may be more stringent than federal standards for treated water.

(2) Based on the Langelier Index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.

(3) Turbidity of treated water is not to exceed 0.3 NTU 95% of the time.

(4) No more than 5% of distribution system samples can be total coliform positive.

(5) Haloacetic acids (five) is the sum of the concentrations of mon-, di-, and trichloroacetic acids and mono- and dibromoacetic acids. MCL based on annual average.

(6) Total trihalomethanes is the sum of the concentrations of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. MCL based on annual average

(7) Lead and Copper Rule Action Level.

a: absent

nd: non-detected at State DLR or MDL if DLR not available